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ARROWHEAD

COMBAT DEVELOPMENTS COMMAND

July 1972

Commander's Call

This July edition of the *Arrowhead* highlights the contributions of our noncommissioned officers to the United States Army combat developments program. As we celebrate our Nation's birthday, it is especially fitting that we recognize the NCO Corps whose history parallels so closely that of our Army and our Country.

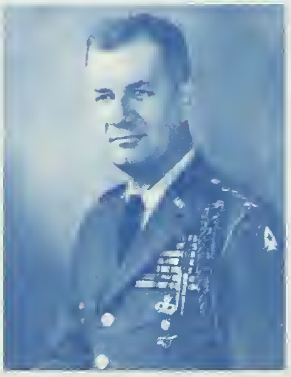
The Second Continental Congress recognized the need for NCO's when on June 14, 1775 it authorized the raising of six companies of expert riflemen. These companies—the beginning of the U.S. Army—each consisted of a captain, three lieutenants, *four sergeants, four corporals*, a drummer or trumpeter, and sixty-eight privates.

The ensuing years have brought many changes. The drummer is no more, the size of the company has more than doubled, the muskets have been replaced by lightweight rapid fire weapons, and the privates have become specialists. The NCO remains—through all the years and all the changes—the backbone of our Army in 1972 as in 1775. It is the NCO who provides the first line of steadfast leadership and wise counsel to our young Soldiers in combat units around the world.

Here in CDC we capitalize on the NCO's hands-on experience and understanding of the needs and problems of our troops in the field by assigning professional combat experienced NCO's to our groups and agencies where they can represent the Soldier directly in the combat developments process. We place these enlisted leaders in key jobs and apply their expertise to insure our materiel requirements and new concepts and tactics are in tune with the real needs of our Soldiers.

Utilizing professional NCO's in this way is a very important step forward—not just for CDC but for our future Army. Not only do these senior Soldiers participate in developing new concepts, doctrine, and hardware within this Command, they also are a strong integrating force welding together the various members of their respective center teams to insure true coordination at the working level. This kind of teamwork expands the base of knowledge available to the entire combat developments program.

Professional NCO's and a professional CDC will insure a professional Army in step with the real needs of our country!



John Norton

JOHN NORTON
Lieutenant General,
U.S. Army
Commanding

ARROWHEAD
COMBAT DEVELOPMENTS COMMAND

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A VIEW FROM THE TOP

An interview with
CSM Lawrence E. Kennedy

By 1LT Robert H. Gregory

***ARROWHEAD:* When one thinks of CDC, he often gets the impression that it is a command composed of many officers and very few enlisted personnel. Just how many enlisted personnel are assigned to CDC?**

CSM Kennedy: It is true CDC has few enlisted personnel, except in the Experimentation Command. At the present time there are 2,450 enlisted personnel assigned to the Command. Of this number, 2,250 enlisted personnel are assigned to the Combat Developments Experimentation Command at Ft. Ord, Calif., and the Hunter Liggett Military Reservation. The remaining 200 are assigned to CDC Headquarters and to various agencies and groups throughout the Command. We also have 31 Sergeants Major and seven Command Sergeants Major in CDC.

***ARROWHEAD:* Isn't this a relatively small number of enlisted personnel for a Command of CDC's size and scope?**

CMS Kennedy: Yes, it is a small number in relationship to the size and scope of the entire Command. However, I feel it is a sufficient number to perform our mission. The enlisted personnel we have are highly qualified.

***ARROWHEAD:* You are constantly making visits to the various posts at which CDC units are located. When you make these visits, what do you do?**

CSM Kennedy: When I first came to CDC, I spent a good deal of my time meeting the CDC personnel throughout the country. Now that I've met all the senior NCOs and officers at our various groups and agencies, I'm primarily devoting my time to visiting TOE units in the Army at different installations throughout CONUS. On these visits I try to promote better relationships between these units and CDC; try to get ideas from these units; and to spread the word of the CDC mission to the senior NCOs in the various TOE units and especially to those NCOs at installations where CDC units are located. I try to give these men a better understanding of what CDC is doing, why we have a unit located at certain installations, and what these units are doing. A year ago when I called on various installations, I found many senior NCOs were not aware of CDC's mission and the existence of CDC units at their installations. Now they do know about CDC. I believe this is a direct result of letting the personnel at the installation know about our mission and how we are a part of the "big team" in combat developments.

***ARROWHEAD:* When you go to these posts, I'm sure you also talk with the lesser ranking enlisted personnel. What are the E–2s and E–3s and specialists saying about CDC?**

CSM Kennedy: I always make a point of going down to the company when I make my visits. I like to get down to the squad level to talk to the Soldiers. The first thing I ask them is, "Have

"The lowest ranking man in CDC knows that his NCOs and commanders care about his welfare and his future in CDC."

you ever heard of CDC?" The predominant answer is that they've never heard of CDC. So I tell them about CDC. Many times I get replies like, "That's outstanding. I didn't know we had such an organization in the Army. How can I join such an organization?" I also ask them for their ideas. A lot of interest in CDC is generated by just talking to the lower ranking enlisted men. They are really interested in knowing what's going on behind the scenes regarding the equipment they get, the doctrines and training developed for the Army, the TOEs and how they are developed, and from where all these things originate. These are the things I discuss with the Soldier.

***ARROWHEAD:* What are the soldiers assigned to CDC units saying about their work?**

CSM Kennedy: Let me use as an example the Soldiers at CDEC. From what I've seen they all seem to be really enthused with the jobs they are doing. They are excited about their jobs. They are out in the field doing something worthwhile, and recognize that what they are doing will have a profound effect upon what the Army will be like in the future. Naturally, some Soldiers don't like their work but this can be found in almost any unit. But overall the people I've talked to on my five trips to CDEC this year are satisfied with their jobs. They recognize and understand their mission and appreciate their positions. Their morale and attitude towards their job indicates they do appreciate the opportunity to be in CDC and to play an important role in the shaping of the Army of the future.

***ARROWHEAD:* Would you say that the majority of the Soldiers assigned to CDC feel this way?**

CSM Kennedy: Yes, definitely. As a major command in the Army, I would say that we have a greater percentage of job satisfaction than any other command in the Army.

***ARROWHEAD:* I want to discuss some of the problems of the enlisted man in CDC. Let's approach it from the NCO's point of view. When a recruit comes to CDC out of AIT, what are the problems the NCO has in making this Soldier part of the CDC team?**

CMS Kennedy: We have some of the problems that all units have. It would be an untruth to say that there are no problems in the enlisted ranks of CDC. But one of the main challenges of the NCO when dealing with a Soldier newly assigned to the Command is molding this individual into a professional. You will notice that I said this is one of the main challenges. I did not say "problems." In CDC we operate with a minimum of supervision. This is necessitated by the various work individuals do. Because of this minimum supervison, we, the senior NCOs, must rely on the individual Soldier's devotion to duty. We must insure reliability, self-discipline, and motivation in our men. Fortunately, we have been getting individuals who have these qualities. In CDC these qualities are almost a requirement. Excluding CDEC, we do not have companies or squads. Each man has his own job and it behooves him to be the type of Soldier I described. I think our Soldiers have performed more professionally than they might have if they had been highly supervised. They are more or less on their own and must perform well because there's no place to pass the buck. I have been more than pleased with the professionalism of the Soldiers we have in CDC. They have earned the trust the senior NCOs have given them.

ARROWHEAD: **Earlier you mentioned the morale of the men in CDC is quite high. Would you elaborate on that?**

CSM Kennedy: In my travels to the various CDC units I have yet to meet a Soldier in CDC who is unhappy with his job. If there is one I haven't found him yet. I am always available to any man in CDC. If someone has a problem I hope he will call me and I'll do my best to alleviate that problem. When I said morale was high, I also include the morale between the CDC Soldier and his counterpart at the post. You must remember that CDC is a tenant unit on most of the posts at which we're located. When I go to CDC units I also check out the post. CDC Soldiers utilize the mess halls of other units and live in barracks with other units. I try to find out if there are any problems or tension between our men and men assigned to other units. I also try to see that our men get the opportunity to get on-post housing, good messing facilities, and the other things that are available to Soldiers at that post. By working with other NCOs not assigned to CDC, I think we have been able to insure that our men get a fair shake at whatever post they may be assigned to. This also gives me the opportunity to spread the word about CDC so that these non-CDC people will have a better understanding of our purposes for being at a particular post. I said that I have not seen a man unhappy with his assignment to CDC. However, I have spoken to some Soldiers who, although content with their job assignment, have felt that they could do a better job in another area of CDC. For example, I spoke with a man at our Communications and Electronics Agency at Ft. Monmouth, N.J., who felt he could do a better job at our Armor Agency. Even though he was satisfied with his job at Monmouth, he felt he could be more beneficial to the Army and to CDC by being assigned to the Armor Agency. When I find a situation like this, I do all in my power to move the individual to a job in which he can do his best.

ARROWHEAD: **You are saying then that CDC will do all in its power to get a man located in a job for which he is best qualified, even if it means a change of post?**

CSM Kennedy: That is correct.

ARROWHEAD: **How has the recent Army cutback in personnel affected the enlisted men in CDC? Have we lost a lot of highly qualified personnel due to early retirement and early out programs?**

CSM Kennedy: Yes, we have lost many highly qualified personnel. This has been especially true at CDEC. But under the "unit of choice program" available at CDEC we hope to get some highly qualified personnel to replace those we've lost. The guarantee of a minimum 16 months stabilized tour has increased this probability. I foresee no problems as far as our strength level is concerned. We can't say for sure how effective the "unit of choice" program has been at CDEC but in the next six months we will. So far it looks real good.

ARROWHEAD: **What changes in the role of the NCO in today's Army have you seen as you travel around the CDC units?**

CSM Kennedy: It has been tremendous. It is a 180° turn. Fifteen months ago no Sergeant Major in CDC had the opportunity to visit Army TOE units and other CDC units to talk with Soldiers and get ideas about improving the Army, and improving doctrine, training and equipment. Now through the efforts of our Commanding General and the various Group Commanders, the senior NCOs are getting this opportunity. In fact the Sergeants Major in CDC recently visited the 4th Infantry Division at Ft. Carson, Colo. Here we talked with their senior NCOs and to the Soldiers. We got down to the squad level and really got some good ideas

"I always make a point of going down to the company when I make my visits. I like to get down to the squad level to talk to the Soldiers."

from the Soldiers. This visit is indicative of the importance now being applied to CDC's senior NCOs. We now know that we are truly a part of the team. And General Norton has given us great support and has really endorsed this type of program. We are looking forward to even greater success.

ARROWHEAD: **While visiting Ft. Knox, I learned from SGM Parker that his MOS is in Armor and that previously the Sergeant Major did not necessarily have an MOS for that agency. What is the story behind this?**

CSM Kennedy: In January of 1971, out of 31 Sergeants Major assigned to CDC, only five had the MOS compatible with the agency to which they were assigned. Now 100% of our Sergeants Major are assigned to the agency with which their MOS is compatible. As you know from your visit to Ft. Knox, Colonel Charles Heiden, the former Armor Agency Commanding Officer, was instrumental in getting senior NCOs with an Armor MOS assigned to the Armor Agency. Through the efforts of General Norton and Agency Commanders like Colonel Heiden, all our agencies are doing this. We are also getting excellent support from Department of the Army in getting personnel assigned to CDC with the proper MOS for jobs that come available through normal attrition, PCS, and retirement. I would say that one of the major factors in the success of CDC has been the proper assigning of NCOs to MOS related positions. Before a man goes to one of our agencies, we make sure he is qualified in the MOS relating to the work of that agency.

ARROWHEAD: **Is this being done for the lesser rank ranking enlisted personnel too?**

CSM Kennedy: No, we are currently just doing it with E-7s and above.

ARROWHEAD: **I attended an NCO symposium at Ft. Knox several months ago. NCOs were actually getting involved in the Army's research and development program. What can you tell us about this?**

CMS Kennedy: The program is a new one to CDC and to the Army. I believe the Armor Agency was the first to sponsor such a symposium and has sponsored a total of four symposiums this year. Other agencies are also getting into the program. The Aviation Agency at Ft. Rucker had a symposum recently. We, the NCOs in CDC, are really excited about this program. At last we are being asked to contribute to the research and development area of the Army. CDC has realized the extreme value that the personal experiences of NCOs can play in developing the new Army. I have heard many comments from general officers throughout the

Army regarding the success of the symposiums.

We have also received favorable comments on NCO symposiums from the Army Materiel Command, which works closely with CDC. You might say we are like the "Gold dust twins." They have recognized this as a valuable tool in the R and D area. The NCO can offer a lot of expertise to action officers on certain projects. The NCO who is experienced with some piece of equipment can really give that action officer the good and bad points of it. I think there is a new era coming in CDC, and perhaps in AMC, where NCOs will be part of the evaluation team in designing the new vehicles for the Army. I certainly hope that will be true. All the NCOs in the Army who have heard of the CDC symposium are really excited about it.

***ARROWHEAD:* Is CDC the first Command to practice this on a somewhat regular basis?**
CMS Kennedy: As far as I know, yes, CDC was the first. At Ft. Knox, SGM Parker had the ideas to do this. With support from Colonel Heiden, the former Armor Agency Commander, the program got off the ground. We have received great support from General Norton, also. I believe that part of the success of these symposiums comes from the fact that the CG and the agency commanders favor and support the program. The NCO symposium will be a regular thing in CDC.

***ARROWHEAD:* Periodically you and all the other Sergeants Major meet in a Sergeants Major Conference. What do you do in these meetings?**
CSM Kennedy: We have only one major conference per year. We meet in October. All of the Sergeants Major come here to discuss ideas and recommendations from their Soldiers to be presented to Department of Army Staff at the Army Commanders' Conference and Sergeant Major of the Army's Conference. Each group within CDC has its own Sergeants Major Conferences too. In these conferences they discuss any problems in the agencies, assignment of personnel, and any problems at the installations where the agencies are located that might affect that agency.

As you know, we have seven Command Sergeants Major, one at each group and at CDEC. We have to do most of our business by telephone because CDC is located all over CONUS. We have units from coast to coast.

In addition to having our October Conference, Sergeants Major in CDC will go as a group to various TOE units to get first-hand information on the Army. We find this to be more beneficial than any type of meeting or conference.

***ARROWHEAD:* Are there any NCOs assigned with our CDC liaison officers around the world?**
CSM Kennedy: No, except our liaison officer in Vietnam has an E-5 who helps in an administrative capacity. But I just returned from England, where I talked with some British NCOs. In the British Army the NCOs have a great deal more responsibility than our NCOs. I got some real good ideas from the British NCOs.

***ARROWHEAD:* What are the NCOs in CDC doing to improve themselves?**
CSM Kennedy: We have some E-7s who are attending the advanced course of the Noncommissioned Officers Education System. Attendance at the NCOES is for the best qualified. CDC does have some NCOs scheduled to attend. This is a competitive program and unit commanders recommend NCOs to attend. But we have somewhat of a problem here. Often the commander is reluctant to let a good man go. He wants to keep this good man in the unit. Now we have to sell the unit commanders on letting the good man go to school. Even though the unit may suffer by the loss of a good NCO, the NCO suffers more if he doesn't have the chance to go to school to better hmself.

In the future, with the competition getting so great, the NCO who doesn't have the NCOES behind him is going to find promotions hard to come by. The Army is cutting down and with fewer NCOs the competition is greatly increased. You've got to really earn that stripe today.

At Ft. Bliss, Texas, there is now a leadership course for E-8s only. The course will prepare them to be Command Sergeants Major. It is a PCS move and a 23 week course. I would say that if a man doesn't get this schooling, the

"We have to do most of our business by telephone because CDC is located all over CONUS. We have units from coast to coast."

chances of his making Sergeant Major are very slim. It's like an officer who doesn't get to attend the Command and General Staff College. If he doesn't go, he doesn't become a general officer. So if the E-8 doesn't go to this school at Ft. Bliss, he won't make E-9.

ARROWHEAD: **In other words, the emphasis on professionalism is greater than ever before.**

CSM Kennedy: Yes, definitely. The NCOs are doing more now to police their own ranks than ever before. I know I am. With my Sergeants Major, we're getting rid of the men who don't want to be what I call "good, hard-core NCOs." We want to keep the professionals.

ARROWHEAD: **Then the impression is that NCOs are no longer content to "follow the lesson plan?"**

CSM Kennedy: Correct. We want responsibility. Under the leadership of General Norton and the group commanders, we're becoming part of the "CDC Team" and getting that responsibility.

ARROWHEAD: **What about the NCO career program? Are any CDC NCOs attending the career courses and is CDC getting any of these graduates assigned to the Command?**

CSM Kennedy: Yes, we do have some CDC NCOs at the career schools. We have an E-7 at Logistics School right now. That's the only one

"I am always available to any man in CDC. If someone has a problem I hope he will call me."

I know of at the moment. Through the help of Department of Army Assignment Branch and our own Personnel Directorate, we have been able to get some of these NCOs with expertise from these various career schools. These guys are real experts when they finish the school. And that's the man we want at CDC. CDC is setting higher standards for the NCO who gets assigned here. That's why we are able to get some of the graduates from the career schools.

***ARROWHEAD:* Has CDC contacted the faculties of the various schools to inform them of CDC's need for highly trained NCOs? Do the faculties at these schools know of CDC's mission and watch for that one outstanding NCO who will be an asset to CDC?**

CMS Kennedy: I don't believe the facilities have been given that type of information. That's an area in which we should be looking.

***ARROWHEAD:* What is the NCO Quarterly Conference?**

CSM Kennedy: These conferences are held by the various CDC groups. Their purpose is to update the senior NCOs at the installations where the groups and agencies are located about what CDC is doing. We try to keep these installations abreast with the happenings in CDC. Fifteen months ago, many NCOs in the Army didn't know what CDC was doing at their post. These conferences try to give them a better understanding of the CDC mission and the direction in which we and the Army are moving.

***ARROWHEAD:* How would you sum up the changes in the role of the NCO in CDC?**

CSM Kennedy: There has been a great improvement in the attitude towards the NCO and other enlisted men in CDC in the past year. This is greatly due to the efforts of the Commanding General. General Norton is sincerely concerned about every man in the Command. The lowest ranking man in CDC knows that his NCOs and commanders care about his welfare and his future in CDC.

Each Soldier in CDC is looked upon as an individual and not just a number in the TDA. This understanding of the human factors by our commanders and NCOs makes CDC a better place for each Soldier. Our Soldiers realize this and do a better job because of it. You know we capitalize the word Soldier in CDC. This idea came from a private at Ft. Knox. I relayed the message to General Norton and now throughout CDC, the term "Soldier" is always capitalized. I think that really tells the story about how important the individual is to CDC.

***ARROWHEAD:* Thank you very much.**

ENGINEER AGENCY TIES UP RIBBON BRIDGE COMPANY TOE

BY GERALD A. WHITE

Present and future concepts of combat operations are predicated upon a high degree of mobility for tactical forces. Current float bridge equipment, with the exception of the Mobile Assault Bridge (MAB), does not provide the speed of construction required by the rapidly moving assault forces of today's Army. Traditionally, float bridging has involved the assembling or construction of a roadway onto boats or pontoons so that vehicular traffic can cross a stream or river either by joining components in the bridge configuration, to completely span the wet gap crossing, or by constructing rafts (or ferries), all of which require special equipment, such as air compressors, cranes, etc, and considerable manpower. This concept had remained virtually unchanged for more than 100 years until the advent of the first radical innovation in bridging, the Mobile Assault Bridge (MAB), which was introduced into the Army inventory approximately 10 years ago. This bridge has the roadway as a part of the superstructure mounted on an amphibious truck chassis.

Today we are excited about the imminent introduction into the Army inventory of another new idea in bridging, the Ribbon Bridge. This new bridge, a floating modular bridge that uses the float as a roadway, is capable of supporting a class 60 load in normal crossings. It has undergone engineering tests and is currently in the final phase of the service test being

Mr. White is currently assigned to the USACDC Engineer Agency, Ft. Belvoir, Va. as a military TOE Analyst.

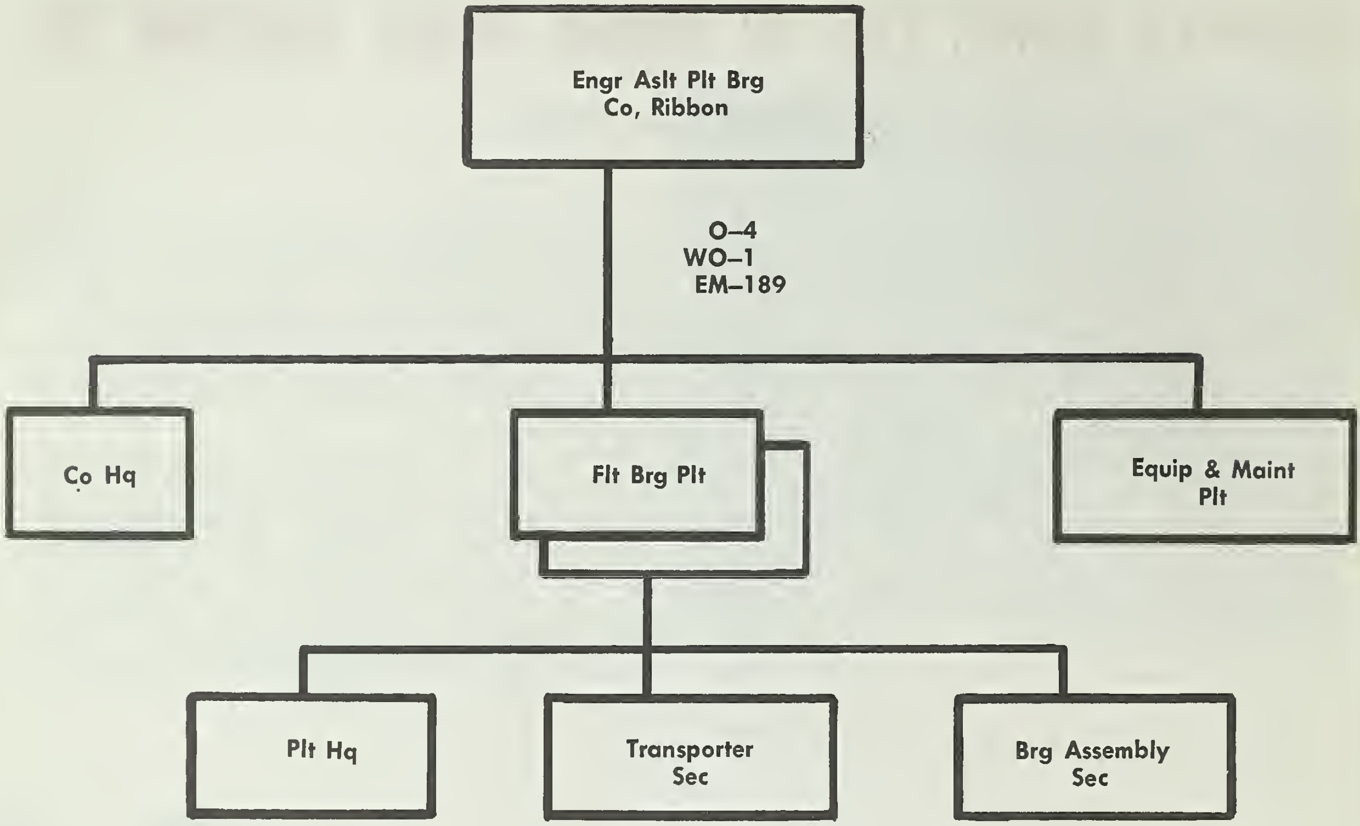


Figure 1. Organizational Chart, TOE 5–79T.

conducted at Ft. Lewis, Washington, by the Armor/Engineer Test Board.

Development of a major new item of equipment frequently requires concurrent development of new doctrine and a new organization associated with it. Such is the case with the Ribbon Bridge. The Combat Developments Command Engineer Agency has recently completed a tentative Table of Organization and Equipment (TOE 5-79T) for the Engineer Assault Float Bridge Company, Ribbon. In developing this TOE a number of factors had to be considered:

First, the capabilities of the current Float Bridge Company (TOE 5-78G), equipped with the M4T6 bridge, had to be approximated. This company can provide 700 feet of bridging or five 4-float and five 5-float rafts.

Second, an effort had to be made to reduce the number of personnel spaces vis-a-vis the current Float Bridge Company, which is authorized 229 officers and men.

Third, a capability to operate independently at more than one bridge site had to be considered. The M4T6 Company, with additional equipment support, can operate at five sites.

Fourth, a rafting capability had to be maintained.

Fifth, other savings in support equipment and personnel should be made if possible.

The organization developed by the CDC Engineer Agency is shown in figure 1.

This company can transport, assemble, maintain, and disassemble a ribbon bridge approximately 700 feet long, or six 7-bay, class 60 rafts, or a combination of bridges and rafts within the limits of the 30 interior bays and 12 ramps organic to the company. The company can operate independently at two bridge sites.

Strength of the company is 194, a reduction of 35 from the strength of the current Float Bridge Company. However, this reduction tells only part of the story. Personnel of the ribbon bridge company assemble and disassemble the bridge themselves. In contrast, construction of the M4T6 requires from one company to one battalion of combat engineers, depending on length of bridge. Personnel of the M4T6 Com-

The new Ribbon Float Bridge is seen under test here with the Armored Vehicular Launched Bridge (AVLB) as its load.

pany transport and maintain the bridge but provide only supervision for its assembly and disassembly.

The TOE has been structured to include a headquarters which contains the normal command and control, administrative, mess, unit supply and communications functions. In addition it features the inclusion of a two-man recon team, the members of which will accomplish bridge site reconnaissance. The team is also SCUBA qualified, enabling them to accomplish such jobs as emplacing booms and nets to minimize the threats to the bridge from floating mines, enemy demolition personnel, and debris.

An Equipment and Maintenance Platoon performs organizational maintenance of the organic equipment (to include on site maintenance at the bridge sites) and provides a limited site preparation capability with two dozers. For the actual bridge/raft assembly and disassembly there are two Float Bridge Platoons, each capable of operating independently. Each of the platoons consists of a Headquarters, a Transporter Section and a Bridge Assembly Section. The Headquarters provides the command and control element. The Transporter Sections each contain 15 interior bays, 6 ramp bays (the bridge/raft components and the 21 transporters (modified M139A truck chassis) and the personnel required to haul, launch, and retrieve the bays. The Bridge Assembly Sections include the bridge erection boats that pick up the bays after launch and move them into bridge configuration (or serve as propulsion means for rafts). They will also hold the bridge in place if the bridge is to remain for only several hours (if the bridge remains in position for an extended period of time a cable anchorage system will be erected to relieve the bridge erection boats). These Sections include the personnel to man the bridge erection boats and to assemble the bays in either bridge or raft configuration.

Another radical departure in the concept of this company (as opposed to the M4T6 Company) is that this new company will not include the Support Platoon which contained light tactical rafts, assault boats, and the foot-bridge that currently are included in the M4T6 Company TOE.

Sometime in the future, a U.S. Army armored column, rapidly approaching a water barrier, will find it spanned by the Ribbon Bridge, emplaced by the Engineer Assault Float Bridge Company, Ribbon.

The C-5 Evaluation: An Exercise In Inter-Service Cooperation

BY MAJOR GEORGE P. HIGDON JR.

The advent of the C–5 aircraft into the military airlift system introduces a new rapid strategic deployment capability that could revolutionize strategic concepts. Virtually all Army equipment, including armor, may now be considered air-transportable. Fully equipped CONUS based units will soon be air deployable in response to global contingencies.

On 9 April 1970, the Department of the Army accepted an Air Force offer to participate in the user evaluation of the C-5 aircraft. CDC was designated the Army user representative and given the responsibility to manage the Army participation in the evaluation. These actions by the Air Force and Army mark a significant milestone in the development of a Department of Defense weapons system by providing for bi-service operational test and evaluation. This will enhance the realization of full military potential from the C–5 aircraft in logistical and strategic air movement operations.

The purpose of the Army's participation in this evaluation is to ensure that the Army is able to utilize fully the increased airlift capability offered by the C–5 system. Specifically, two major objectives have been defined: first, to determine the characteristics, capabilities, and limitations of the C–5 aircraft to the Army

Major George P. Higdon, Jr. is presently serving as Data Analyst and Project Officer in C–5 Evaluation Group, HQ CDC, with duty station at Charleston AFB, South Carolina.

logistics system; and, secondly, to determine the impact of the C–5 system on joint air movement operations and to determine the suitability of doctrine, organizations, materiel, and procedures for employment of the C–5 in that role.

To meet the above objectives, Department of Army authorized the organization of the Army C–5 Evaluation Group within CDC to plan for and exercise overall management; to control and coordinate Army participation; and to report results of the C–5 Category III evaluation. This group is collocated with the Air Force Joint Test Force (JTF) at Charleston Air Force Base and functions as the Army element of the JTF. The JTF is an element of the Military Airlift Command, the Air Force user. DA also designated Army Materiel Command as the command responsible for the evaluations of the employment of the C–5 in the air logistics system, and CONARC as the command responsible for the evaluations to meet the air movement objective. In turn, AMC and CONARC established Evaluation Directorates located at HQ AMC and Ft Hood, respectively, to plan for and conduct the evaluation.

Use of the C–5 has been or will be observed in all roles in which it might be employed in support of the Army. These include routine and emergency resupply through the MAC Channel Airlift System, special assignment airlift missions, joint air movement of Army units, and resupply of those units in air landed and airdrop operations.

The evaluation is being conducted to the maximum extent possible by participation in actual missions and training exercises. Since joint exercises are relatively infrequent, an alternative test vehicle was needed. In order to evaluate the procedures for use of the C–5 aircraft in the strategic deployment of Army units and to qualify Army units for air movement by C-5, a series of Strategic Air Transportability Operations (SATO) is being conducted. These exercises encompass all facets of an actual air movement operation less actual flight. The scenario for each SATO requires the strategic deployment of the participating unit, as a part of a larger force to an overseas area. The unit is to be deployed in a posture ready for commitment shortly after arrival in the objective area.

Preparation for the operation is initiated by a warning order to the participating units, normally thirty to forty days prior to the scheduled date of the operation. The units then undergo training as prescribed in the appropriate Army Subject Schedule, prepare load plans, and take other actions necessary in preparation for overseas movement by air. Air Force support is provided as required during this period. The day before the simulated movement, the unit receives its movement order. Troops and equipment are marshalled and loaded, the aircraft closes up, and the flight is simulated by briefings to passengers. Selected loads during each SATO are taxied to enhance realism and facilitate data collection. The aircraft then opens up and cargo and passengers are offloaded. Thus far, Static Air Transportability Operations have been the most productive test vehicle. In addition, they have proved to be extremely valuable as a training exercise. Units which have participated in a SATO and subsequently participated in a joint exercise performed extremely well in the air movement phase of the exercise. Thus far, nineteen different type units have participated in SATO evaluations. These range from an Air Cavalry Squadron, Infantry and Armored Battalions—Army Aviation units to support units such as a Heavy Equipment Maintenance Company and an Engineer Construction Battalion. Other units include a Pershing Battalion and a Strategic Air Defense Artillery Battalion.

In the conduct of the evaluation, certain problem areas have been uncovered. Corrective actions are being initiated as the problems are being found. For instance, it has been found that the numerous manuals pertaining to air movements need updating to include planning data

Test loading of the M–107, 175mm gun and the M–60 tank.

A mechanized unit boards the aircraft.

for the C-5 and guidance on movement of combat vehicles. The field manuals pertaining to many type units, which prior to the C–5 were not air transportable, do not contain adequate guidance for air movement operations. Reports from commanders of units involved in the evaluations indicated that air movement guidance contains gaps and voids and is fragmented among numerous publications. Action is underway to include necessary planning guidance in appropriate publications. In response to the requirement stated by battalion commanders participating in SATO evaluations, a single "how to do it" manual, the Air Movement Guide, has been prepared by the C-5 Joint Test Force to fill gaps and voids and reduce fragmentation. This manual has been successful as a guide for Army participants in air movement operations and is rapidly gaining popularity in Air Force and joint organizations. Upon completion of the SATO evaluations, the Air Movements Guide will be revised to incorporate the results of evaluations and comments received from the users and forwarded by the Army C-5 Evaluation Group as a proposed joint Army/Air Force manual.

The evaluation program has demonstrated the value of the C–5 in a deployment of Army aviation and air mobile units. Army helicopters require minimum disassembly for loading on the C-5. Air mobile units can be transported along with their supporting Army aircraft and be operational in minutes after arrival in the objective area. For example, a combination of seven assault, utility, and observation helicopters in a combat ready configuration and 73 troops can be deployed aboard one C–5 aircraft. A combination of twelve utility and assault helicopters in an administrative move configuration along with 73 troops make up one C–5 load. Three Chinooks can be lifted on one C–5 and be operational within 75 to 80 hours after arrival.

To facilitate the air movement of Army helicopters by C–5, the C–5 Evaluation Group has initiated corrective actions in several areas. Improved standardized procedures for preparation, loading and restraint of helicopters have been developed and forwarded for inclusion in the appropriate Army and Air Force manuals. This will eliminate the conflicts and errors currently contained in these several manuals prescribing air movement procedures for UH–1 series helicopters. The current UH–1 ground handling wheels were found to be unsatisfactory for positioning the Hueys in the C–5. At the request of the C–5 Evaluation Group AVSCOM has developed a new positioning device which is presently being tested.

Load planning for the C–5 has been found to

The Bridge Launcher is a tight squeeze, but it fits.

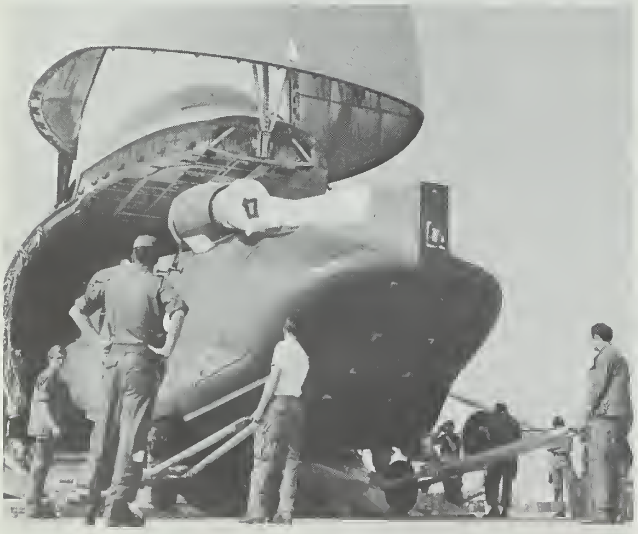
Seventy-five seat troop compartment allows troops to accompany their equipment.

be highly complex due to the amount and type of cargo that may be transported, the fluctuations in the allowable cargo load, and the number of alternative plans that might appear acceptable. Primary responsibility for load planning for unit air movements is not clearly defined. Loads preplanned by Army units have frequently required changes at the time of loading due to errors and late changes to the list of equipment to be transported or aircraft allowable cargo load. Loads arriving at the aircraft often have to be shuffled in order to make them fit. This causes delays which interrupt the smooth flow of cargo through the departure airfield. In order to alleviate the load planning problem at the unit level, the C–5 Evaluation Group has undertaken the development of a computerized load planning system to prepare load plans for a unit for movement by a mixed fleet of C–5 and C–141 aircraft. The input for the program is a deck of ADP cards punched to describe each individual, each piece of equipment, and each cargo pallet. This card system is similar to one now being used by the XVIII Airborne Corps for air movement manifesting. The output will consist of a personnel manifest, an equipment manifest, a diagram showing the disposition of the equipment aboard the aircraft, and the load weight and balance data. This would be printed out for each aircraft load. The objective of the system is to develop aircraft loads at the departure airfield thus eliminating the need for preplanning detailed load plans which frequently require last minute changes and adjustments.

Considerable data is being and will continue to be collected in order to develop planning factors for the deployment of Army units by C–5 aircraft. Aircraft sortie requirements for type organizations and loading/unloading times are representative of the planning factors being developed.

Scheduled completion of the evaluation is December of this year. Evaluation of the airdrop system is due to take place this summer, and a joint exercise involving a brigade size task force is scheduled for the fall. These two major evaluations will conclude the overall program.

Army participation in the operational test and evaluation of the C–5 aircraft is demonstrating the value of inter-service cooperation in weapons system development and testing. Problems heretofore requiring resolution at service level are being resolved on a daily basis at action officer level. Actions which would normally be handled by correspondence and take weeks are handled in hours by conference. The bi-service evaluation should definitely be labeled a success. Perhaps this is the beginning of a trend.



A load of three Chinooks is being offloaded at Cam Ranh in a direct exchange program.

Twelve Cobras can be transported when stabilizers and rotor blades are removed.

C–5 FACTS

CAPABILITIES The C–5 aircraft is a heavy cargo transporter with an intercontinental range designed to move all equipment organic to the Army division with little or no disassembly. The maximum payload for normal operations will be 200,000 lbs upon completion of testing. Seventy-three troops can be transported in the troop compartment during normal operations. For emergencies, a total of 348 seats can be provided when the cargo compartment palletized seat kit is installed; 267 seats are in the cargo compartment, 73 seats are in the aft troop compartment and 8 seats for couriers are located on the forward deck. Thirty-six 88 x 108 inch 463L cargo pallets can be transported in a side-by-side load configuration. Maximum load per 463L pallet is 10,000 lbs. Maximum range is 3,000 nautical miles with a 200,000 lb payload. A kneeling feature provides for truck bed and ground level loading and reduces ramp angles for loading and offloading vehicles and equipment.

CHARACTERISTICS The cargo compartment with dimensions of 19 feet wide by 144.6 feet long, including ramps, and a height of 13.5 feet is equipped to carry general cargo, palletized cargo, vehicles and outsize cargo. The compartment can also be equipped for airdrop of personnel and equipment. Loading can be accomplished through both the forward and aft ends of the aircraft. This permits straight-through drive-on-off accessibility to the main cargo compartment. Combination loads consisting of paratroops and their airdrop equipment, or troops and cargo/equipment, can be transported simultaneously. An air transportable loading dock (ATLD) can be positioned for use in forward areas to mechanically load and unload palletized cargo directly from the aircraft. It cannot be used for a cargo holding or storage area. The ATLD can be extended to 296 feet in length, is about 63 feet wide and can be adjusted to heights of 48 to 57 inches above the ground. It has a capacity equal to three C–5 loads.

ASK AN NCO

BY 1LT ROBERT H. GREGORY

To the young recruit, he is the symbol of authority.

To the young junior grade officer, he is the voice of experience.

To the United States Army Combat Developments Command, he is an invaluable asset in designing the Army of the future.

He is the Non-Commissioned Officer, the NCO.

The Army always has had a reservoir of knowledge in the NCO ranks, but until recently has not tapped it fully in the research and development area. Realizing the value of the experiences of the Non-Commissioned Officers, CDC's Commanding General, LTG John Norton, has placed new emphasis on the role of the NCO in shaping the Army of the future.

CDC's Command Sergeant Major, CSM Lawrence E. Kennedy spends many days each month traveling to various installations in CONUS to talk with NCOs and Soldiers. From them he seeks new ideas for improving the combat developments system. The Army Sounding Board for the Individual Soldier, a board that acts on suggestions for improving equipment and training in the Army, insures that CDC will consider any idea for improving equipment submitted voluntarily by any Soldier. But these suggestions usually relate to something that is already in the Army's inventory. Now CDC is finding that symposiums conducted with projec managers and experienced NCOs are yielding sound ideas on specific items of equipment, organization, and doctrine during early developmental stages.

According to CSM Kennedy, the concept of having NCOs meet in symposiums to discuss research and development and the Army of the future was born at the CDC Armor Agency at Ft. Knox, Ky., where four symposiums have been held already. In August 1971, Colonel Charles K. Heiden, then Commanding Officer of the Armor Agency, and SGM William Parker conceived the idea of inviting NCOs to discuss product improvement programs and new programs for equipment in the Army inventory. The first symposium was on a small scale. The subject was product improvement of the M60A1 Tank; the NCOs invited to attend were selected from units at the Ft. Knox Armor Center only.

The M60A1 Tank symposium was so successful that a major symposium on a new Armored Reconnaissance Scout Vehicle (ARSV) was planned for late February. The personnel attending this symposium were especially picked from cavalry units throughout CONUS. Major John Schneider, who chaired the symposium, said, "We wanted to get knowledgeable, dedicated professionals to attend, so we wrote the Commanding officers of selected units and requested that they select outstanding NCOs. Those men selected were being paid a high honor by their Commanding Officers, for they were being singled out as highly qualified personnel. I was extremely impressed with the personnel chosen."

In late February, 15 NCOs reported to the Armor Agency to do something they had never been asked to do before. These men were going to talk with the project manager for a proposed new Army vehicle on what they, the NCOs, believed to be the optimum vehicle for the assigned mission. Since the vehicle to be discussed was a reconnaissance vehicle, there was a need to have experienced cavalry NCOs attend. From as far west as Fort Lewis, Washington came 3rd Cavalrymen PSGs Thomas Crow, Elias Olivarez, and Harley Beard. From Fort Riley, Kansas, in the mid-west came PSGs Gary Dugan and John Klis of the 4th Cavalry. The 6th Armored Cavalry, from the east coast's Fort Meade, Maryland, sent PSG Joseph Valentine and SSG Randolph Norris. From Fort Knox, many specialists in different fields were chosen to attend. Giving the symposium the benefit of their 36 years combined total of maintenance experience were MSG Patrick J. McGrath and SFC Floyd Moore. To give advice on weaponry, the symposium had SFC Thomas A. Branard. For insight on problems of training new recruits to use new equipment, Drill Instructors SSG Edwin M. Day and SSG James C. Skanes were invited. From the various units located at Fort Knox came SFC William A. Rudacille, 19 years Cavalry experience; SSG Willie J. Mack, 5 years Cavalry; and SGM William Parker, CDC Armor Agency Sergeant Major. The Army experience of all individuals totaled 200 years. Cavalry experience was 127 years. Maintenance experience equalled 36 years, not counting the daily maintenance each man had done on his vehicle throughout his Army experiences. Their enthusiasm was high. As the rain beat down outside the Armor Agency, the group sat down with the ARSV Project Manager and several of his engineers to shed light on what they, the NCOs, would like to see in a new Armored Reconnaisance Scout Vehicle.

From the U.S. Army Tank Automotive Command in Warren, Michigan, came Colonel Oscar C. Decker, Jr., the Project Manager for the ARSV. He and his engineers had come to learn "first hand" what the NCOs had to say about this proposed new piece of equipment. The symposium immediately became informal and they began the task of analyzing the vehicle from ground to turret and front to rear. Speaking from experience, each NCO could support or criticize the various recommendations on the vehicle. Which is best: tracked or wheeled? What weapons should it have? Should it be able to swim? What do we want in a reconnaissance vehicle: speed or mobility? What about communications and night visibility? Where should the doors be? Should it even have doors?

Shedding their coats, the NCOs prepare to discuss the ARSV.

To try to answer these questions is not an easy task. There is more than one answer to almost every question. But this is what Colonel Decker was seeking. And he was seeking it from the men who would know. As Sergeant-Major Parker put it, "We wanted to get the views of the men who will actually be using the equipment and vehicles the Army will have in the future. These men are the ones who will be using the equipment on a daily basis, and because of this daily usage will have a much better insight into the potential problems that can be eliminated before the equipment is put into the Army inventory."

PSG John Klis from Fort Riley said, "Many times the position of a switch or some other piece of equipment inside a vehicle could be better used if it was placed in an area of easier access to the individual. Once a piece of equipment has been produced it is a matter of hun-

The Materiel Need Documents bring the NCOs up to date on progress of the ARSV. With the background from the MNs, the NCOs can effectively discuss the proposed vehicle.

dreds, even thousands of dollars to reposition it. By realizing such minute problems as this in the planning stage, the cost may be only a few dollars to correct the situation."

Major Schneider has this view of the NCOs role. "The field grade officer loses the daily contact with the Army's hardware as his career progresses. The NCO has the day to day hands-on equipment expertise because he must know his vehicles inside and out. He continually reinforces his knowledge of his vehicle each day he works with it. This is why the NCO often can present the best ideas regarding maintenance, crew duties, and performance of the vehicles instead of the officer who is not exposed to the vehicle on a daily basis."

During the ARSV Symposium the 15 NCOs thoroughly analyzed the type of vehicle they would want to have for reconnaissance activities. Using over 150 pages of prepared proposals for the new vehicle, the NCOs attacked each proposal and went into an in depth discussion on each point. It was the NCOs who did the talking at this symposium. This was their show. Their chance to insure that those who follow them as platoon sergeants, maintenance sergeants, and AIT instructors would have superior equipment to perform the mission.

CDCs Armor Agency has sponsored two symposiums since the ARSV. There has been a symposium on the product improvement of the M88 Recovery Vehicle and a symposium on the M577A1, Command Post Vehicle. In the planning stage is another major symposium on the product improvement of the M551, Sheridan.

Although the Armor Agency was the first to take advantage of the NCO reservoir of knowledge, other CDC agencies have followed their example. At the CDC Aviation Agency recently, a major symposium was held to discuss trends in aviation. Like the Armor Agency, the Aviation Agency invited NCOs experienced in Army aviation to attend.

At the CDC Communications and Electronics Agency at Fort Monmouth, New Jersey, an NCO Field Manual Review Board has been established to review draft field manuals and to provide advice to increase the quality and usefulness of these field manuals for the user in the field. Although this review board is operating on a trial basis, it is a positive step in increasing the role of the experienced NCOs assigned to that agency. The men chosen to review the FMs are quite familiar with the equipment and information being presented in the manuals. They know from experience what problems arise from poorly written and unclear field manuals. Since the enlisted man is the one who must depend on the field manual to sucessfully complete his assigned tasks, as principal users, it seems only proper that the NCOs play a part in preparing the manuals.

This is the story of the NCO symposium concept. It is not just a friendly gathering of experienced men who have shared similar experiences in the same fields. It is the concept that the NCO has taken on a new dimension in today's Army. He is still the backbone of the line outfit. But now he is having his say about combat developments, and CDC is listening. CDC is giving him the chance to use the knowledge he has gained throughout his years of military experience. And he is taking this task seriously.

In the symposium on the ARSV, PSG Gary Dugan reflected the attitude of the entire group when he said, "We're down here to do something we've never had a chance before to do. We are getting the chance to tell Department of the Army what we want in a new vehicle. Let's make good use of this opportunity." And that's exactly what they did. So have all the other NCOs who have attended an NCO symposium sponsored by the Combat Developments Command.

THE NCO IN CDC

EDITOR'S NOTE

Command Sergeant Major William Craig's Comments at the last Commanders Conference illustrate the role of the NCO in the Combat Developments Command. The *Arrowhead* would like to share his comments to the Commanders with our readers. CSM Craig is the Command Sergeant Major of the CDC Combat Systems Group at Ft. Leavenworth, Kansas.

General Norton—General Hume—Gentlemen. For the next few minutes I would like to discuss with you several areas of interest in which the Noncommissioned Officers of Combat Developments Command are involved. It is with sincere feeling that our current programs are in keeping with the objectives established by the Chief of Staff, United States Army, and emphasized by the Commanding General, United States Army Combat Developments Command, i.e., promote professionalism in the Noncommissioned Officers corps; emphasize and practice the principles in the leadership for professionals program, and enhance dedicated and selfless service to our country.

In April 1971, during the reorganization and transition of Combat Arms Group to Combat Systems Group, it was noted that a number of agencies were not properly staffed with sergeants major whose background coincided with that of the mission of the agency concerned. In short, the sergeants major were not primarily MOS related with their position, i.e., armor, military police, and artillery. A program was immediately instituted in order to assign incoming sergeants major to the proper position. At the present time the sergeants major at our eight agencies are primarily MOS related. This action has improved the overall performance at the agencies and has established the key factors of "job satisfaction" and "proficiency" in the Noncommissioned Officers. In reality, we have remotivated our Noncommissioned Officers by placing each individual in the proper position on the team and utilizing his potential to the fullest extent. This program brought out the individual's dedication and pride and most of all "Professionalism" in doing a job.

My next subject deals with the quarterly conferences that are conducted at those installations where the agencies are co-located. As of this date there have been two (2) such conferences held. The first was at Fort Benning during the month of November, and recently one was held at Fort Bliss. These conferences afford an opportunity for the agency sergeants major to get out and take notice of what the other agencies are involved with in other fields of endeavor. Also, the command sergeants major of the "Major Army Headquarters", "The center", "The school", "The board", as well as the command sergeant major of CDC, are personally accorded an invitation to attend such conferences. The purpose of these conferences is to formalize comments of experienced enlisted personnel from field units operating special pieces of equipment, i.e., XR–311, REDEYE, VULCAN, etc. The Noncommissioned Officers are requested to voice candid opinions, discuss problems and describe field expedients. The results are considered for inclusion on the product improvements of present equipment and development of new equipment.

To date these conferences have left a terrific impact with those at both installations as has been indicated by such remarks: "We are moving forward with both a professional and positive attitude toward the future of our Army and at the same time keeping in mind the main ingredient of the Army, The Soldier."

As an added comment, these conferences, plus timely visits by Sergeant Major Kennedy and me, help to effectively mold together the center team concept involving the senior Noncommissioned Officers at each of the installations. We solicit their opinions and thoughts to such subjects as: Noncommissoned Officer Education System, Noncommissioned Officer refresher courses, Qualitative Management Program, Basic Leadership Courses, and how field manuals should be written. These are only a few subjects—but it is felt that we are making some headway. However, there is more ground to be covered and our challenge is to move ahead.

The next item concerns that of the "Noncommissioned Officer Symposiums" that are conducted at the USACDC Armor Agency. Three such symposiums have been held to date: November, February, and March.

During the period of 9–11 November 1971, the Armor Agency hosted its first Noncommissioned Officers Symposium to discuss the improvement of the M60A1 tank. The meeting at Fort Knox included Noncommissioned Officers from the 2d Armored Divison, First Cavalry Division, and 194th Armored Brigade. The personnel were well qualified and professionally represented the "user" in the field. They rightfully challenged the validity of several proposed improvements and presented thoughtful, intelligent questions. The Noncommissioned Officers made numerous specific suggestions, particularly in the area of human engineering—important to the crewman who must operate equipment. Many of their ideas will be incorporated in the improved M60A1.

The second symposium was held on 23–24 February and the purpose was to discuss the Armored Reconnaissance Scout Vehicle—a new vehicle to replace the present M114. Noncommissioned Officers who attended were from the 6th Armored Cavalry Regiment, 1st Infantry Division, 194th Armored Brigade, 2d Training Brigade, US Army Armor School and 3d Armored cavalry Regiment. The Noncommissioned Officers were provided drafts of the material need document to study in advance of the meeting. They were asked to make specific recommendatons on the physical characteristics of the vehicle and on the entire program. Their comments on vehicle performance requirements in areas of armament, vehicle capability and maintenance were extremely helpful and are being considered by the project manager for incorporation in the vehicle.

A third symposium was held on 2 March at the Armor Agency in conjunction with the product improvement of the M88 Recovery Vehicle. Noncommissioned Officers from the US Army Armor School, US Army Training Center and 194th Armored Brigade attended the symposium. Several improvements were proposed to improve reliability of the impact wrench, strengthen the power take-off of the accessory drive, install service/test points in the hydraulic system, and improve the boom limit valve for cold weather operation.

The success of the symposiums will lead to future meetings hosted by the Armor Agency to address the product improvement of the Command Post Vehicle (M577) and Armored Reconnaissance/Airborne Assault Vehicle (M551). In addition to the symposiums becoming common place in the development of all armored equipment it is clear that Noncommissioned Officer expertise can well be used in the later stages of hardware development and testing.

As a recommendation, Noncommissioned Officer expertise could be fully utilized at each of the agencies and would be an asset to the agency commander. This type of Noncommissioned Officer is well qualified and technically proficient within his field of endeavor; i.e., cannon artillery, air defense artillery, armored vehicles, aircraft, and missiles. Their comments on performance requirements in their area of endeavor would be extremely helpful and should be considered by the project managers for incorporation in development and production programs.

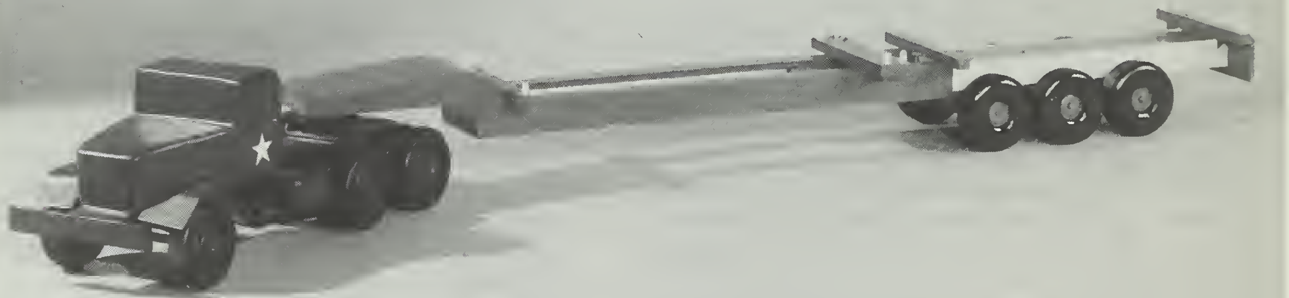
My last subject concerns that of the recent visit to the 1st Cavalry Division (TRICAP) and 2d Armored Division, Fort Hood, Texas. From Combat Systems Group, six agency sergeants major and I, joined the other sergeants major from Combat Developments Command there.

The conclusions of those that were involved are—that the visit was most worthwhile, very informative and productive. From an individual point of view, it was most enlightening and refreshing to associate once more with field type organizations. However, I do feel most strongly that programs such as this should continue and, in the future, units should be appraised that we are seeking answers to the question, "What can we in Combat Developments Command do to assist you to perform your mission in a much better way?" In short the Noncommissioned Officers of the Combat Developments Command are now for the first time in CDC history being recognized by the Soldier in the field as their spokesman.

In summary, we of the Combat Developments Command have embarked on various programs to make our Army better—better in every respect. Although we are aware the Army will be smaller, the task of defending our country will remain large: This logically demands an improved Army—one in which every man counts. We are aware of this fact every hour, every day.

The Noncommissioned Officers—as members of the CDC team—have re-dedicated themselves by putting forth their best efforts to any assigned mission or task. It is expected of them to be competent, firm, fair, and understanding. Each has established by performance a reputation for "knowing his business." Each has developed a genuine interest in the personal welfare and wellbeing of the Soldier. The Soldier deserves the best and we must provide it!

WHAT THIS ARMY NEEDS IS A GOOD .... MULTIPURPOSE CHASSIS TRAILER



BY MAJOR KENNETH G. SCOTT

The views presented in this article are strictly those of the author and do not represent current US Army or CDC progress in the field of transportation.

There is an old saying which goes, "What this country needs is a good 5-cent cigar." Well, we have changed this saying to, "What this Army needs is a good multipurpose chassis/trailer."

The Army has been using trailers for a long time. They come in a variety of sizes, shapes, and capacities. These trailers and semitrailers consist of a bed, body, tank, or container attached to a chassis. The problem begins with the number of different chassis in the inventory. Can a chassis/trailer be designed which will accomplish the mission of many chassis and thereby decrease the number of chassis in the inventory? Answering the question in the affirmative and proceeding from there, can this chassis/trailer be built to handle a multitude of beds, bodies, tanks, and containers? Yes! This capability is within the state of the art, but we must be prepared to pay for it. Can this same chassis be designed to allow the beds, bodies, tanks, and containers to be attached and detached at the will of the user? Again the answer will be a yes, as this is within the state of the art, but we must be prepared to pay for it. The advantages of a chassis/trailer of this design will include increasing the flexibility of a unit to transport a variety of cargo with the same chassis. Another advantage is in the supply and maintenance area where the use of one chassis will reduce the number of spare parts required to be maintained in the inventory.

Let us take the medium truck company, because of its versatility, to further explain what could happen if a multipurpose chassis/trailer becomes a reality. The medium truck company can now be equipped with three semitrailers which are on different chassis. These semitrailers are also found in other units within the Army. Therefore, any advantages gained by using a single multipurpose chassis/trailer could be realized by these units.

Major Scott is currently a project officer in the Tactical Branch, Materiel Systems Division, USA Combat Developments Command Transportation Agency.

One of the real workhorses in the Army inventory is the semitrailer, stake, 12-ton, 4-wheel, M127A2C, or as it is known in trucking circles, the S&P (stake and platform). The hardwood floor is fastened to the body frame which is mounted on the M126A2C chassis. This semitrailer has been used to transport personnel, bulk cargo, vehicles, and containers. It is a versatile trailer and is a prominent fixture in the medium truck company (cargo).

Medium truck companies can also be equipped with semitrailer, tank, fuel, 4-wheel, 5,000-gallon, M131 series (POL tanker). The tank is mounted on a frameless chassis and is utilized to transport military motor fuels, water, and also as an oiler in some instances.

The third possibility for the medium truck company is the semitrailer, refrigerator, 7½-ton, 2-wheel, M349A1 (reefer), also on a frameless chassis. This is utilized to transport perishable cargo and other cargo requiring a prescribed temperature level.

Thus far, we have mentioned three semitrailers of different configurations that can now be found in a medium truck company. With the advent of containerization there is also a fourth possibility—the semitrailer, 20-foot, van, commercial, demountable body, transmodel cargo container (MILVAN container chassis). All four of these semitrailers are mounted on different chassis and it is with this in mind that we pose the question, "Why cannot the Army develop and utilize one chassis that will accomplish the work of these four semitrailers?" We have purposely not expanded this question to include all semitrailers although there are many more possibilities.

In order for a chassis/trailer to be developed, the mission requirements must be known; thus, a description of materiel need, such as that following, is necessary. "The multipurpose chassis/trailer will be used as a personnel, cargo, vehicle, container, and liquid transporter. It will replace the semitrailer, stake, 12-ton, 4-wheel, M127A2C; the semitrailer, tank, fuel, 4-wheel, 5,000-gallon, M131 series; the semitrailer, refrigerator, 7½-ton, 2-wheel, M349A1; and the semitrailer, 20-foot, van, commercial, demountable body, transmodel cargo container. It will be used on and off roads throughout a theater of operations. The chassis/trailer will have special beds, racks, tanks, rollers, containers, and kits provided for application to the basic chassis/trailer."

Special features will be required in this chassis/trailer, such as an expandable frame so that container multiples up to one 8′x8′x40 can be transported at one time or one 5,000-gallon tank (approximately 30 feet long) or one 7½-ton refrigerator van (approximately 24 feet long) or one stake and platform (S&P) (approximately 28 feet long). Twist locks must be available for securing the containers to the chassis/trailer. This twist lock system must also accomodate a roller system which will give an added capability to the chassis/trailer of being able to transload the 463L pallet directly from an aircraft, cargo transporter/loader, or K-loader to the chassis/trailer for transport. The deck height must be such that it will insure stability when traversing offroad terrain under any configuration. The chassis/trailer must be compatible with the fifth wheel height of the M818, 5-ton, military design tractor or its successor. The weight to be placed on this chassis/trailer will start at 44,800 pounds for an 8- by 8- by 20-foot container, 67,000 pounds for one 8- by 8- by 40-foot container, and 41,700 pounds for a 5,000-gallon tank. These weights do not include the chassis or frame.

The development of a multipurpose chassis/trailer will increase a medium truck company's capability to transport containers one day and the 5,000-gallon tank the next. Added capability will be gained by transporting 463L pallets from air terminals to the user with offloading the pallet and reloading on the S&P. The capabilities and uses for this chassis/trailer are not limited of course to just the four semitrailers listed, for the Army has vans of all sizes and shapes which could be mounted on the proposed chassis/trailer. This chassis/trailer is within the state of the art, but only a cost analysis study will determine if this chassis/trailer will be cost effective or have an overriding flexibility and capability over the present chassis in the inventory.

THE MVA AND DOMESTIC POLICY

By LTC Richard B. Noonan

American military forces trained and equipped to fight are equally capable of meeting any humanitarian need. We often think of the development of the vast continental western region as a by-product of the railroad expansion during the latter 19th Century. But, the Army played an equally significant role during that period by assuring some semblance of order and security for the westward movement.

Even today the Corps of Engineers is charged with the monumental responsibility of inland dams and waterways which has often an understated and even misunderstood impact on the nation's future. So, the precedent is established. However, isn't it possible that the evolving Modern Volunteer Army might also make its contribution to America's growth and sustained viability? Besides being a specified and widely understood instrument of foreign policy, perhaps the MVA could also be an effective instrument of domestic policy, and to the mutual benefit of both the Nation and the Army.

The cold hard facts of future force level reductions coupled with reliance on essentially volunteer resources to man the MVA will generate a new family of problems. Compounding this predicament is the unhappy, but true, observation that the Army's image within the civilian ranks is not entirely conducive to the attraction and retention of quality soldiers. Manning the MVA and keeping it trained, especially in the specialty skills and in the face of budgetary constraints, will be a challenge.

What then might the Army do to improve its stature, attract first rate young men and women, contribute to the domestic scene and keep hard-skill personnel trained to an unquestionable level of readiness? In my opinion there is a way to address each of these key issues under one total effort. Hence, CDC's Socio-Economic Missions, Modern Volunteer Army, or SEMMVA to satisfy the acronym syndrome. The SEMMVA study would determine the feasibility of the MVA exercising a significant role in the metropolitan socio-economic arena. It should address the training benefits and potential for enhancing the Army image by contributing to the upgrading of socio-economic depressed areas throughout the metropolitan regions. Within the constraints of the force levels expected in the 74–80 time period, the feasibility of participating in a variety of activities should be determined. Exploration would probably lead to other likely missions, but as a minimum these should be examined:

- Guidance in self-help techniques for residents of high population density, low income housing.
- Lend-lease of heavy and special purpose equipment to socio-economic depressed areas.
- Provision of advisory teams and specialists to selected metropolitan or regional agencies.
- Assistance in preventive medicine techniques to include the provision of surplus medical equipment and supplies.
- Employment of engineer units to assist in the creation of "vest pocket" parks and other recreational facilities in the depressed high population density areas.
- Promotion of team athletic activities using surplus athletic equipment.
- "Dust-off" type support in established high percentage vehicle accident areas during holiday and other peak periods.

The suggestion that SEMMVA be undertaken provokes many questions—the answers to which can only be found through careful analysis instead of hip shooting type reactions. Calculated in sheer dollars and cents, SEMMVA presents some interesting funding problems. Certainly such an undertaking would not be entirely from DOD funds. With the evident domestic implications there is the likelihood that other federal agencies such as HUD or HEW might also contribute. There also is the possibility of matching funds, some of which could be provided by the municipal or county agency, or even coordinated through the Metropolitan Area Council of Governments which serves the interests of the entire community.

Beyond the stated possibilities which lie within the scope of SEMMVA, there is also the matter of reducing the hostile attitude toward the uniform-military or otherwise. The uniform need not be a symbol of absolute authority or as some would believe—oppression. The MVA could, through SEMMVA, help alleviate such misconceptions by fulfilling a domestic role and demonstrating that the uniform can also be a symbol of assistance, compassion and leadership.

There are, no doubt, other missions which would serve a two-fold purpose for the MVA, e.g., maintaining training proficiency while attracting volunteers. Beyond these essentials lie the benfits of improving public attitude toward the armed services while making a contribution in resolving the agonizing socio-economic problems facing the Nation.

Who, other than Combat Developments Command, has the resources, talent, and ingenuity to undertake a SEMMVA study and see it through to adoption as a reality? At the risk of overdramatizing a point, there is little standing in the way of creating an attitude toward MVA not unlike that which prevailed inside the embattled wagon trains when a yellow scarfed troop of cavalry appeared on the horizon.

CDC ANNUAL AWARDS

The General Brehon B. Somervell Award

"How the Army Should Be Supported"
Presented by Under Secretary of the Army, the Honorable Kenneth E. BeLieu, to Major John Carlin of CDC's Special Operations Agency at Ft. Bragg, N.C. The award recognizes Major Carlin's landmark study on the treatment of American prisoners of war. Major Carlin, a graduate of New York University, is from Brooklyn and served two tours of duty in Vietnam. He has served as an advisor, and on his second tour his battalion constructed the Pleiku-Kontum Highway.

The Lieutenant General Lesley J. McNair Award

"How the Army Should Be Organized"
Presented by Under Secretary of the Army, the Honorable Kenneth E. BeLieu, to Major Douglas K. Lehmann of Headquarters, CDC, Organization Directorate, for his work in improving the organizational structure of Engineer units. He is from New Jersey and holds a Master's Degree in Systems Management. He served in Vietnam as an advisor to Engineer elements of the ARVN 23rd Division.

The Lieutenant General John P. Daley Award

"How the Army Should Be Equipped"
In memory of CDC's first Commanding General, the award was presented by Mrs. Daley to Major Richard J. Girouard of the Intelligence and Control Systems Group for his efforts towards improving the Army's hardware. Major Girouard is from Boston and holds a Master's Degree in Mathematics. He has served in Infantry and Armor assignments from platoon to brigade level. He served in Vietnam as an advisor.

The Major General George W. Casey Award

"How the Army Should Fight"

Presented by the widow of Major General Casey to LTC Albert C. Malone of CDC's Infantry Agency at Ft. Benning, Ga. The award is for LTC Malone's contributions in the area of improving combat effectiveness. LTC Malone has served in Infantry assignments from rifle companies to battalion staff. He has served two tours in Vietnam, one as an advisor and the other as an Infantry battalion commander.

The Commanding General's Award

"Improvements in the Developments Process"

Presented by LTG John Norton to Major Edward G. Preston of the Combat Developments Experimentation Command at Ft. Ord, Calif. The award is for Major Preston's innovations in improving the combat developments process. The Cleveland born Major entered the Army from Michigan ROTC, and has served in Signal Corps assignments from company to battalion executive officer. He holds a Master's Degree in Systems Engineering from the University of Arizona.

The Soldier's Award

"Improve Effectiveness of the Soldier"

Presented by Under Secretary BeLieu to Command Sergeant Major Lawrence E. Kennedy for his contibutions towards improving the effectiveness of the Soldier. Born in Mississippi, CSM Kennedy entered the Army in the Horse-Drawn Artillery at Ft. Benning, Ga. His years of Combat Arms assignments range through Armor, Infantry, and Engineers. He has served two tours in Vietnam with the First Cavalry Division. He is a Master Parachutist and wears seven World War II campaign stars and five for Vietnam.

ANNIVERSARY IN REVIEW

Photographs by 2LT Gary R. Steimer and 1LT Matt Godek.

The pictures on the following pages illustrate the tenth anniversary celebration of the Combat Developments Command held at Ft. Belvoir, Va., on 9 June 1972.

Military and civilian members of CDC arrive for the ceremonies.

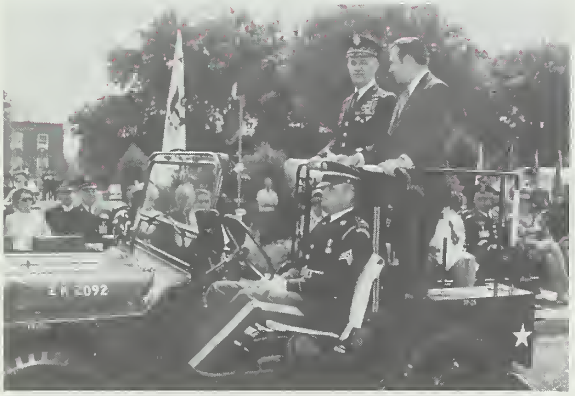
Foreign liaison officers attend the anniversary activities.

Command Sergeants Major await the arrival of the honored guests.

The Under Secretary of the Army, the Honorable Kenneth E. BeLieu arrives with LTG John Norton.

Major General and Mrs. Curtis Chapman arrive at the main parade grounds.

A large crowd turns out for the anniversary



Preparing to inspect the 3rd Infantry

Host and honored guest watch the review.

Inspecting the ranks

The Fife and Drum Corps of the Old Guard

Soldiers of the 3rd Infantry pass in review.

LTG Norton presents his anniversary message to the members and friends of CDC

The Color Guard of the Old Guard

The fly-over by US Army helicopters in formation marks the end of the ceremonies at the parade field.

The Honorable Kenneth E. Belieu gives the main address.

Social hour at the Officers' Open Mess follows the anniversary ceremonies.

Cutting the anniversary cake with the traditional Army saber

The Point of the Arrow

JULY QUESTIONS

1. Which of the following statements best describes the use of pink light?

a. It enhances the capability of light amplification sighting devices.

b. Its low visibility maintains the viewer‘s night purple.

c. It is invisible.

d. It has high potential for safety and signal uses due to its extreme high visibility in poor weather.

2. For Air Defense application the "beam rider" or "correction-to-line-of-sight" guidance system has limitations. Which of the following limitations characterizes a beam rider in an Air Defense role?

a. Electronic jamming of the guidance system is easy for airborne targets.

b. A system designed to track both target and missile is inordinately complex for Air Defense use.

c. The terminal maneuver required against high speed crossing targets is extremely severe on the missile airframe.

3. Holography is useful in which of the following areas?

a. Communications, as an aid to rapid secure wire communications.

b. Combat surveillance, more specifically, as a means of providing a three dimensional image.

c. Aircraft Self Protection, as a method for alerting the pilot to an optical threat.

d. Radar, as a method for improving radar acquisition range.

4. SUMMIT (Shelter, Utility, Maintenance, Modular, Integrated, Transportable) will provide a hanger for aircraft maintenance units. Technological advances indicate the cover for this hangar could be made from?

a. Paper honeycomb.

b. Honeycomb aluminum paneling.

c. Lightweight plastic paneling.

d. All of the above.

5. Operational ration developments are oriented towards:

a. New food processing methods.

b. Increased troop acceptability and portability.

c. Packaging techniques to obviate mess gear.

d. All of the above.

JUNE ANSWERS

1. Research in the technology of cryogenics or the physics of extreme cold has uncovered which of the following? (Select 2)

[✓ a.] In extreme cold poor conductors become good conductors and good conductors become super conductors.

[✓ b.] In extreme cold metals become brittle and liable to crack or shatter.

c. In extreme cold hydrocarbon fuels burn more efficiently.

d. In extreme cold all solid materials become insulators or very poor conductors.

2. The ZSU–23–4 and the ZSU–57–2 provide high mobile tactical air defense systems. The effective range of the twin 57 is **4000** meters.

3. The effective range of the quad 23 in the radar mode is **3000** meters and **2000** meters in the optical mode.

4. The Hot Cycle, Reaction Drive Concept in helicopters:

a. Envisions diverting engine exhaust gases to drive the helicopter rotor system.

b. Has the advantage of simplicity which results in the elimination of many heavy and complex dynamic components required by other types of propulsion systems.

c. Was successfully tested in the XV–9A.

[✓ d.] All of the above.

5. The reverse osmosis process is a new technological process:

a. That will furnish one process that can be applied to all water sources to produce potable water including removal of CBR contaminants.

b. That is similar to electrodialysis in that it uses an organic membrane to remove salts from water using hydraulic pressure.

c. That represents a reduction in the different kinds of skills required for operation and different types of equipment that would have to be used by the Field Army to produce drinking water.

[✓ d.] All of the above.

Spot Reports

Human Relations Visit

Sergeant First Class Annie Aaron from Ft. Belvoir, Va., pays a courtesy call on the deputy commander of the Army Combat Dvelopments Experimentation Command, Colonel Robert Cunningham, as she begins her weeklong tour of the Command. SFC Aaron has recently been appointed Human Relations Counselor at the Combat Developments Command at Ft. Belvoir, parent unit of not only CDEC here, but also the 19 other CDC agencies in the United States. During her visit to CDEC this week, SFC Aaron is paying visits to all CDEC units both at Fort Ord and at the field laboratory on Hunter Liggett, chatting with officers and enlisted men alike, regarding the program she represents and the newly established office at CDC which will provide a central point of contact for all matters pertaining to human relations in all CDC agencies. She will visit all units and recreational facilities of CDEC and be briefed on its mission. Her escort for the CDEC tour has been SFC Charlie Baxter of CDEC's Support Battalion.

INCS GP

In June 1971 the Combat Support Group of USACDC was redesignated as the Intelligence and Control Systems Group and on 16 June 1972 the Group celebrated its first anniversary as part of the overall CDC reorganization. The highlight of the celebration was the presentation of awards by BG Edward F. Gudgel, CG, INCS, to several members of the Group headquarters and the subordinate agencies.

The awards are patterned after those originated by HQ USACDC. From left to right: MAJ Richard J. Girouard was recognized for his contributions as an ORSA analyst to the STANO program and was awarded the INCS award, "How the Army Should be Equipped." LTC Kenneth B. Stinson was awarded the INCS Award, "How the Army Should be Organized," for his effectiveness in managing the STASAR study. Mr. Robert P. Irwin, CEA, was presented the INCS Award, "How the Army Should Fight" for his achievements as the analysis team leader for the in-house study, "Evaluation of DA Standards for Tactical Communications Systems."

Also receiving recognition for their contributions to the INCS Group combat developments program were LTC John J. Murphy for his direction of functional interoperability of tactical ADP systems in support of the Army in the Field; LTC Sidney T. Weinstein, INTA, for his contribution to development of intelligence concepts at all levels of command in the field Army; and Mr. George K. Kitarogers for his contributions in the developmental program of the Tactical Operations System.

Two recipients who could not attend the ceremony but were also recognized were COL Hugh H. Jones, former Chief of Staff, who received the "Commanding General's Award," for his managerial capability and organizational technique displayed during the reorganization of the Combat Support Group into INCS Group; and Mr. Clyde M. McClellan, CEA, who was presented the INCS Award, "How the Army Should be Supported," for his contributions in the preparation of two qualitative materiel requirements documents for the automatic electronic switching system and the tactical satellite communications system.

Following the ceremony, the personnel of INCS competed in volleyball, softball, horseshoes, and checkers, with trophies being awarded to the winners. The casual atmosphere was further enhanced by civilian attire of all varieties, an abundance of food, and a large quantity of liquid refreshment. Personnel departed with a feeling of pride in accomplishments of the past year and a desire to make the coming year even greater.

For God and Country

No man has ever been independent; everyone of us has his roots in the past. Every liberty we enjoy has been bought by someone else; there is not a privilege nor an opportunity that modern society grants to us that is not the product of other men's labors. We drink from wells that we did not dig; we warm by fires we have not kindled. We live by liberties we have not won; we are protected by institutions we did not establish. Our churches are built upon the sacrifice others have made so that truth might light the path we now walk. Our government rests upon a foundation the founding fathers constructed so that we, the inheritors, might stand as free men. No man lives unto himself; all the past has been invested in us.

PRAYER

Father, we give thanks for the noble ideals which were established by our forefathers; for the determination with which they sought to make those ideals permanent; for the heritage of free speech which they bequeathed to us; for the form of government which they passed to their posterity; and for those towering figures whose long shadows reach even to the feet of those now living. Grant unto us, the recipients of this great trust, such a sense of the eternal values of our national ideals that we shall hasten to obey Thy voice, which calls us to render service for the preservation of these ideals in the earth. Lead us to be true stewards of our national trust, that we shall transmit this Nation to our descendents not only no less, but far greater than it was transmitted to us.

Amen

CDC Advisory Group

A unique team of scientists, educators and industrialists met at the Ft. Belvoir, Va., headquarters of the Army's Combat Developments Command (CDC) on 6–7 July to become the Combat Developments Advisory Group.

The Group is chartered to advise the Commander of CDC, Lieutenant General John Norton, on scientific, technological and operations research matters in combat developments. They will also provide short and long-range guidance and recommend changes in program emphasis. CDC identifies and anticipates Army combat needs.

"The experienced advice and uninhibited counsel from innovative leaders in their field," said General Norton, "is essential to the successful conduct of CDC's mission."

The problem-solver's first meeting focused on "Suppression of Enemy Air Defense" and "Technological Opportunities."

Mr. Norman R. Augustine of LTV (Aero) is Chairman of the Advisory Group expected to meet three-to-four times per year. Others who will provide their expertise are Dr. Enoch J. Durbin, Princeton University; Mr. Mike W. Fossier, Vice President, Raytheon Co; Mr. Peter W. Schutz, Vice President, Cummins Engine Co; Dr. Matthew A. Sutton, General Manager of Honeywell Inc; Dr. Clive G. Whittenbury, Vice President, Science Applications, Inc; Mr. Carlos C. Wood, a private consultant, and Dr. Leland D. Strom, President of Delex-Delphi Corp.

Colonel Lynn to Get Star

The highlight of any military career is the attainment of the rank of general officer. It is truly the mark of a successful career in the military. After years of service and military education, the officer who attains the general officer rank knows he has done his job well.

This taste of success lies just around the corner for one of CDC's officers. Colonel Otis C. Lynn, the Director of the Directorate of Concepts, Doctrine and Force Design, CONFOR Group, is about to make the big step into the general officers ranks. The latest general officer promotion list contained Colonel Lynn's name for nomination to the rank of brigadier general.

The 45 year old general officer nominee began his active duty in the Army in 1944 and was commissioned a Second Lieutenant two years later. While serving active duty, he completed his education by attaining a BGE degree from the University of Omaha and a Master of Science Degree in International Affairs from George Washington University. He is also a graduate of the Air War College and the Command and General Staff College.

Colonel Lynn's previous assignments include Commanding Officer, 12th Cavalry, 1st Cavalry Division (Airmobile), US Army Vietnam; Commanding Officer 1st Brigade, 2nd Infantry Division, Korea; and Chief of Staff, 2nd Infantry Division, Korea. Colonel Lynn has also served as a member of the Research/Analysis Division, SACSA, Office of the Joint Chiefs of Staff, Washington, D.C.

The Master Parachutist wears the Silver Star with two Oak Leaf Clusters, the Legion of Merit with one Oak Leaf Cluster, the Purple Heart, the Meritorious Service Medal, and the Combat Infantrymans Badge, second award. Colonel Lynn is married and has two sons.

The Command extends congratulations to Colonel Lynn and his family.

Commanding General **LTG John Norton**
Information Officer **Col. George H. Hallanan Jr.**
Deputy Information Officer **LTC Gerald D. Hill, Jr.**
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